
Herbs annual, biennial, or perennial, rarely subshrubs or shrubs. Trichomes sessile, medifixed, appressed, malpighiaceous or 3–5(–8)-rayed stellate. Stems simple or branched basally and/or apically. Basal leaves petiolate, rosulate, simple, entire or dentate, rarely pinnatifid or pinnatisect. Cauline leaves petiolate or sessile, cuneate or attenuate at base, rarely auriculate, entire or dentate. Racemes ebracteate or basally bracteate, rarely bracteate throughout, corymbose, elongated or not in fruit. Fruiting pedicels slender or thickened and nearly as wide as fruit, erect, ascending, divaricate, or reflexed. Sepals oblong or linear, erect, pubescent, base of lateral pair saccate or not. Petals yellow or orange, rarely white, pink, purple, or violet; blade suborbicular, obovate, spatulate, or oblong, apex rounded or emarginate; claw differentiated from blade, subequaling or longer than sepals. Stamens 6, erect, tetradynamous; anthers oblong or linear. Nectar glands 1, 2, or 4, distinct or confluent and subtending bases of all stamens; median glands present or absent. Ovules 15–100 per ovary. Fruit dehiscent siliques or rarely silicles, linear or rarely oblong, terete, 4-angled, latisepitate, or angustiseptate, sessile or rarely shortly stipitate; valves with an obscure to prominent midvein, pubescent on outside, rarely also on inside, keeled or not, smooth or torulose; replum rounded; septum complete, membranous, translucent or opaque, veinless; style obsolete or short, rarely half as long as or subequaling fruit, often pubescent; stigma capitate, entire or 2-lobed. Seeds uniseriate or rarely biseriate, winged, margined, or wingless, oblong, plum or flattened; seed coat minutely reticulate, mucilaginous when wetted; cotyledons incumbent or rarely succulent.

About 150 species: N hemisphere, primarily in Asia and Europe, with 14 species in Central and North America and eight species in N Africa and Macaronesia; 17 species (five endemic) in China.

Erysimum cheiri (Linnaeus) Crantz (as Cheiranthus cheiri Linnaeus in FRPS) is a widely cultivated ornamental plant, but it is not known if it has become naturalized in China or elsewhere in Asia.

1a. Sepals united, persistent well after fruit maturity; fruit oblong, slightly angustiseptate, with transversely oriented malpighiaceous trichomes; styles (4–)5–10(–12) mm ................................. 17. E. siliculosum

1b. Sepals free, caducous shortly after anthesis; fruit linear or rarely linear-oblong, terete, 4-angled, or latisepitate; with longitudinally oriented, malpighiaceous and/or 3–5-fid stellate trichomes; styles 0.5–3–(–4) mm.

2a. Annuals or biennials.

3a. Fruiting pedicels nearly as thick as fruit.

4a. Trichomes malpighiaceous mixed with 3-forked ones; fruiting pedicels 2–4 mm; petals 6–8 × 1.5–2 mm; fruit 4-angled, (2–)3–8(–10) cm ................................. 16. E. repandum

4b. Trichomes exclusively malpighiaceous; fruiting pedicels 0.5–1.5(–2) mm; petals 3–4(–5) × 0.3–0.6 mm; fruit terete, (1.3–)1.7–2.2(–2.5) cm ................................. 15. E. sisymbrioides

3b. Fruiting pedicels distinctly narrower than fruit.

5a. Fruit valves densely stellate inside.

6a. Petals spatulate, well differentiated into claw and limb, 1.5–2 mm wide; fruiting pedicels 5–13(–16) mm; seeds 1–1.3 mm ................................. 13. E. cheiranthoides

6b. Petals linear to linear-oblanceolate, undifferentiated into a claw and limb, 0.3–0.5(–0.7) mm wide; fruiting pedicels 3–7(–9) mm; seeds (0.6–)0.7–0.9 ........................ 14. E. macilentum

5b. Fruit valves glabrous inside, if sparsely pubescent (rarely in E. hieraciifolium), then petals more than 6 × 2 mm.

7a. Trichomes exclusively malpighiaceous, rarely 3-fid ones on style; fruit smooth, with 4 bands of white trichomes separated by glabrous replum and valve midveins ........................ 9. E. canescens

7b. Trichomes 3- or 4-fid mixed with malpighiaceous ones on leaves and fruit; fruit torulose, without 4 white bands of trichomes.

8a. Fruit (6–)7–11(–13) cm; racemes bracteate at base ................................. 10. E. benthamii

8b. Fruit (1–)1.5–3.5(–4) cm; racemes ebracteate.

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1 Herbarium: Higher Plants, V. L. Komarov Botanical Institute, Russian Academy of Sciences, Prof. Popov Street 2, St. Petersburg 197376, Russia.
9a. Plants (10–)30–90(–110) cm tall; fruiting pedicels suberect or ascending, subappressed to rachis; leaves entire or obscurely denticulate .......... 11. *E. hieraciifolium*

9b. Plants 3–10 cm tall; fruiting pedicels divaricate; leaves sinuate-dentate or dentate .......... 12. *E. schlagintweitianum*

2b. Perennials.

10a. Petals pink or purple.

11a. Petals narrowly spatulate, 7–9(–10) × 1.7–2(–2.5) mm; plants (1.5–)2–6(–8) cm tall  5. *E. funiculosum*

11b. Petals broadly obovate or broadly spatulate, (14–)16–22(–25) × (3–)4–6(–8) mm; plants (6–)10–28(–36) cm tall ............................................................................... 4. *E. roseum*

10b. Petals yellow or orange.

12a. Plants stemless; raceme subumbellate and often without a rachis ............  2. *E. handel-mazzettii*

12b. Plants with a distinct stem; raceme short or long, with a distinct rachis.

13a. Racemes bracteate throughout; fruit 4–5 mm wide; seeds 3–4.5 mm ............... 1. *E. forrestii*

13b. Racemes ebracteate or only lowermost few flowers bracteate; fruit 1–2 mm wide; seeds 0.8–3 mm.

14a. Leaf blade mostly filiform to narrowly linear, folded ..................................... 7. *E. flavum*

14b. Leaves lanceolate, oblong, lanceolate-linear, or very rarely linear, not folded.

15a. Fruit smooth, strongly 4-angled, with 4 bands of white trichomes separated by glabrous replum and valve midveins ............................................  9. *E. canescens*

15b. Fruit torulose, flattened, subterete, or slightly 4-angled, without 4 bands of white trichomes.

16a. Plants 2–10(–15) cm tall; petals yellow, 0.6–1(–1.2) cm; sepals 4–6 mm; raceme usually deflexed in fruit ..........................................  8. *E. deflexum*

16b. Plants (12–)20–100 cm tall; petals often orange-yellow, (1.2–)1.5–2(–2.3) cm; sepals (6–)7–10(–11) mm; racemes erect.

17a. Basal and lowermost leaves coarsely dentate; stigma subentire; fruit (5–)8–11 cm; Sichuan, Xizang, and Yunnan ...............  3. *E. wardii*

17b. Basal and lowermost leaves entire or obscurely denticulate; stigma prominently 2-lobed; fruit (1.1–)2.5–5(–8) cm; N and E China, Russia, and Korea .................................................... 6. *E. amurense*
years. Trichomes malpighiaceous, rarely a few 3-fid on leaves adaxially. Stems absent. Basal leaves rosetulate; petiole (0.7–1.5–4.5–6 cm); leaf blade oblong or lanceolate, (0.9–1.5–4–(5.5) cm × (1.5–)2.5–8–(10) mm, base attenuate, margin entire or denticulate, apex acute. Racemes subumbellate and often without a rachis, not elongated in fruit, ebracteate. Fruiting pedicels erect, (0.7–)1.5–4–(5) cm, slender, narrower than fruit, straight. Sepals oblong-linear, 7–10 mm, caducous, lateral pair saccate. Petals yellow, broadly obovate or spatulate, (1.5–)1.7–2.1–(2.3) cm × (4–)5–8 mm; claw longer than sepals. Filaments 6–8 mm; anthers oblong, 1.5–2 mm. Ovules 12–24 per ovary. Fruit linear or rarely linear-oblong, slightly 4-angled, (1.5–2.5–4.5–(5.5) cm × 2–3.5 mm, not torulose, slightly curved; valves not keeled, with a distinct midvein, outside with malpighiaceous trichomes, inside glabrous; gynophore 0.5–3 mm; style 0.7–2 mm; stigma capitate, slightly 2-lobed. Seeds oblong, 2.5–3.5 × 1–2 mm, on filiform funicules to 7 mm. Fl. May–Jul, fr. Jul–Oct.


具苞糖芥 ju bao tang jie

Herbs perennial, 20–90 cm tall. Trichomes almost exclusively malpighiaceous, rarely mixed with few 3- or 4-forked ones on leaves. Stems erect, simple or rarely branched basally. Basal leaves rosetulate; petiole 1–4–(8) cm; leaf blade lanceolate to linear-lanceolate, (1.5–)3–10–(15) cm × (2–)3–7–(12) mm, base attenuate or cuneate, margin coarsely dentate, apex acute or acuminate. Upper cauleine leaves sessile or subsessile, subentire. Racemes corymbose, densely flowered, bracteate basally, elongated considerably in fruit. Fruiting pedicels divaricate, ascending, or erect, (3–)5–11–(18) mm, stout, narrower than fruit, straight. Sepals lanceolate-linear, (6–)7–10 × 2–2.5 mm, lateral pair saccate. Petals orange-yellow to yellow, obovate, (1.2–)1.5–2–(2.3) cm × (4–)5–6–(7) mm, apex rounded; claw distinct, subequaling or longer than sepals. Filaments yellow, 8–11–(13) mm; anthers linear, 2–3–(3.5) mm. Ovules 50–80 per ovary. Fruit linear or rarely linear-oblong, slightly 4-angled or flattened, (5–)8–11 cm × 1.5–2 mm, slightly torulose, erect and subappressed to rachis or ascending to divaricate, straight; valves with a prominent midvein, outside with malpighiaceous trichomes, inside glabrous; style slender, 1–3 mm, cylindric, narrower than fruit; stigma capitate, subentire. Seeds oblong, 1.5–2 × 0.8–1.2 mm. Fl. May–Aug, fr. Jul–Sep.

• Alpine meadows, grassy slopes or scrub, open stony pastures, sandy and rocky mountain slopes, scree; 3000–4600 m. Sichuan, Xizang, Yunnan.


红紫糖芥 hong zi tang jie
Cheiranthus roseus Maximowicz, Fl. Tangut. 57. 1889; C. roseus var. glabrescens Danguy; Erysimum limprichtii O. E. Schulz.

Herbs perennial, (6–)10–28–(36) cm tall; caudex few branched, covered with petiolar remains of previous years. Trichomes malpighiaceous, rarely a few 3-fid ones on leaves adaxially. Stems single from base, leafy. Basal leaves rosetulate; petiole (0.5–)1–4.5–(7) cm; leaf blade oblong, oblong-ovate, oblongate-linear, or linear, (0.6–)1.5–7–(10) cm × (1.5–)2.5–8–(10) mm, base attenuate, margin entire or denticulate, apex acute or obtuse. Upper cauleine leaves subsessile, entire, similar to basal ones in size. Racemes corymbose, elongated in fruit, only lowermost flowers bracteate. Fruiting pedicels divaricate, (3–)4–10–(12) mm, stout, narrower than fruit, straight. Sepals oblong-linear, 6–9 × 1.5–2 mm, often persistent to early fruit maturity, lateral pair strongly saccate. Petals pink or purple, broadly obovate or broadly spatulate, (1.4–)1.6–2–(2.5) cm × (3–)4–6–(8) mm; claw longer than sepals. Filaments 6–8 mm; anthers oblong, 1.5–2.5 mm. Ovules 18–26 per ovary. Fruit linear or rarely linear-oblong, 4-angled, (1–)1.5–3–4 cm × 2–2.5 mm, not torulose, slightly curved; valves not keeled, with a distinct midvein, outside with malpighiaceous trichomes, inside glabrous; style (0.5–)1–2 mm; stigma capitate, prominently 2-lobed. Seeds oblong, 1.5–2.5 × 0.8–1 mm, on slender funicules to 4 mm. Fl. May–Jul, fr. Jul–Sep.

• Rocky schist cliffs, alpine meadows, limestone scree; 3200–4900 m. Gansu, Qinghai, Sichuan, Xizang, Yunnan.

Although Erysimum limprichtii was described from Xizang, it was not listed in FRPS or Fl. Xizang. (vol. 2. 1985). Its type collection is indistinguishable in every aspect from that of E. roseum. The above first record of E. roseum from Yunnan is based on Alden et al. 470 (E).


紫花糖芥 zi hua tang jie
Erysimum absconditum O. E. Schulz; E. chamaephyton Maximowicz.

Herbs perennial, (1.5–)2–6–(8) cm tall; caudex several branched, covered with petiolar remains of previous years. Trichomes malpighiaceous, very rarely with a few 3-forked ones on leaves adaxially. Stems 1 to several from base, leafless or few leaved. Basal leaves rosetulate; petiole (0.2–)0.5–2 cm; leaf blade oblong-linear or oblongate-linear, (0.4–)1–4 cm × 1.5–3.5–(5) mm, base attenuate, margin entire or rarely denticulate, apex acute. Racemes corymbose, not elongated or only slightly elongated in fruit, ebracteate or only lowermost flowers bracteate. Fruiting pedicels divaricate, (3–)4–7–(10) mm, stout, narrower than fruit, straight. Sepals narrowly oblong, 5–6.5 mm, sometimes persistent, lateral pair saccate. Petals pink, narrowly spatulate, 7–9–(10) × 1.7–2–(2.5) mm; claw
subequaling sepals. Filaments 4–6 mm; anthers oblong, 1–1.4 mm. Ovules (12–)16–30 per ovary. Fruit oblong-linear, 4-angled, (1–)1.5–2(–2.3) cm × 2.5–3 mm, not torulose, slightly curved; valves slightly keeled, with a prominent midvein, outside with malpighiaceous trichomes, inside glabrous; style 0.5–1 mm; stigma prominently 2-lobed, lobes subequal. Seeds ovoid-oblong, 1.5–2 × 0.8–1 mm, on filiform funicles to 6 mm. Fl. Jun–Jul, fr. Jul–Aug.

Rocky slopes, grassy areas, alpine meadows, stone beaches; 3400–5500 m. Gansu, Qinghai, Xizang [Sikkim].

The records in FRPS and Fl. Sichuan. (14: 146. 1999) of Erysimum amurense (as E. bungei) from Sichuan are based on misidentified plants of E. benthamii.


Plants (10–)20–60(–100) cm tall; sepals (0.8–)0.9–1.2(–1.4) cm; petals (1.6–)1.7–2.4(–2.6) cm × 5–8 mm. Anthers (2.5–)3–4 mm.

Herbs perennial, 2–10(–15) cm tall. Trichomes malpighiaceous throughout, rarely 3-fid ones on leaves. Stems decumbent or erect, often more than 1 from caudex. Basal leaves rosulate; petiole 4–10(–20) mm, often persistent; leaf blade linear-lanceolate or oblanceolate. Basal leaves petiolate, rosulate, withered by flowering. Lower cauline leaves with petioles 1–3(–5) cm; leaf blade narrowly linear to linear-lanceolate, (2–)1–1.5(–2) cm × 2–5(–10) mm, flat, base attenuate, margin entire, apex acute. Upper cauline leaves sessile, entire. Racemes corymbose, densely flowered, ebracteate, elongated considerably in fruit. Fruiting pedicels divaricate or suberect, (3–)4–8(–10) mm, stout, narrower than fruit, straight or curved upward. Sepals oblong-linear, 6–8(–9) × 1–1.5 mm, lateral pair slightly saccate. Petals yellow, spatulate, 1–1.5(–1.7) cm × (1.5–)2.5–3.5 mm, apex rounded; claw distinct, subequalling or longer than sepals. Filaments yellow, 6–9 mm; anthers linear, 2–3 mm. Ovules 70–110 per ovary. Fruit linear, strongly 4-angled, (3.5–)5–8(–10) cm × 1–1.5 mm, not torulose, erect and subapressed to rachis, or ascending to divaricate, straight or slightly curved; valves outside with four bands of trichomes separated by glabrous replum and valve midveins, inside glabrous; style slender, 1–3 mm, cylindric, narrower than fruit; stigma capitulate, entire. Seeds oblong, 1–1.3 × 0.4–0.6 mm. Fl. May–Aug, fr. Jul–Sep.

Mountains, 700–3800 m. Xinjiang [Kazakhstan, Mongolia, Russia, Tajikistan, Uzbekistan].

**Erysimum canescens** Roth, Catalecta 1: 76. 1797.

**Erysi** humillimum var. grandiflorum Monnet; **Erysi** longistilium J. D. Hooker & Thomson (1861), not Schlechtendal (1830–1832); **E. szechuanense** O. E. Schulz; **E. sikkimense** Polatschek.

Herbs annual or biennial, (15–)30–80(–100) cm tall. Trichomes 3(–4)-forked, mixed with fewer malpighiaceous ones. Stems erect, simple or branched basally, often angled, primarily with malpighiaceous trichomes. Basal leaves petiolate, rosulate, withered by flowering. Lower cauline leaves with petioles 1–3(–5) cm; leaf blade narrowly linear to linear-lanceolate, (2–)3–8(–11) cm × (2–)4–10(–14) mm, base attenuate or cuneate, margin coarsely dentate, apex acute or acuminate. Upper cauline leaves sessile or subsessile, denticulate or subentire. Racemes corymbose, densely flowered, bracteate basally, elongated considerably in fruit. Fruiting pedicels divaricate or ascending, (0.5–)0.6–1.5(–2.5) cm, stout, narrower than fruit, straight. Sepals oblong-linear, (5–)6–8 × 1–1.5 mm, lateral pair saccate. Petals orange-yellow to yellow, oblanceolate or spatulate, (0.8–)1–1.5 cm × 2–3(–3.5) mm, apex rounded; claw distinct, subequalling sepals. Filaments yellow, 7–10 mm; anthers linear, 2–3 mm. Ovules 60–90 per ovary. Fruit linear, 4-angled, (6–)7–11(–13) cm × 1.2–1.7 mm, slightly torulose, erect or ascending, straight; valves with a prominent midvein, outside with malpighiaceous and 3- or 4-forked trichomes, inside glabrous; style slender, 1–3 mm, cylindric, narrower than fruit; stigma capitulate, subentire. Seeds oblong, 1.5–2 × 0.8–1 mm. Fl. May–Jul, fr. Jul–Sep.
Dry rocky areas, oak woods, open pastures, grassy slopes, meadows, roadsides, mountain slopes; (1900–2300–4100 m. Sichuan, Xizang, Yunnan [Bhutan, India, Nepal, Sikkim].

An examination of the syntypes of *Erysimum benthamii* (including that of var. *grandiflorum*) and the holootypes of *E. longisiliquum* and *E. szechuanense* clearly shows that they are conspecific. Unfortunately, the earliest name for the species, *E. longisiliquum*, is illegitimate (a later homonym, and the replaced synonym of *E. sikkimensis*). In FRPS, both *E. benthamii* and *E. longisiliquum* were recognized, even though they are indistinguishable morphologically. *Erysimum benthamii* is the earliest legitimate name for the species.


Herbs annual or biennial, (10–)30–90(–110) cm tall. Trichomes malpighiaceous and 3(or 4)-forked trichomes, glabrous inside; style stout, 1–2 mm, cylindric, sparsely pubescent; stigma entire or slightly 2-lobed. Mature seeds not seen. Fl. Jun–Jul, fr. Jul–Aug. Plains, gravelly gorges; 3400–4700 m. W Xizang [Pakistan].


Dry rocky areas, oak woods, open pastures, grassy slopes, meadows, roadsides, mountain slopes; (1900–2300–4100 m. Sichuan, Xizang, Yunnan [Bhutan, India, Nepal, Sikkim].

An examination of the syntypes of *Erysimum benthamii* (including that of var. *grandiflorum*) and the holootypes of *E. longisiliquum* and *E. szechuanense* clearly shows that they are conspecific. Unfortunately, the earliest name for the species, *E. longisiliquum*, is illegitimate (a later homonym, and the replaced synonym of *E. sikkimensis*). In FRPS, both *E. benthamii* and *E. longisiliquum* were recognized, even though they are indistinguishable morphologically. *Erysimum benthamii* is the earliest legitimate name for the species.


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Dry rocky areas, oak woods, open pastures, grassy slopes, meadows, roadsides, mountain slopes; (1900–2300–4100 m. Sichuan, Xizang, Yunnan [Bhutan, India, Nepal, Sikkim].

An examination of the syntypes of *Erysimum benthamii* (including that of var. *grandiflorum*) and the holootypes of *E. longisiliquum* and *E. szechuanense* clearly shows that they are conspecific. Unfortunately, the earliest name for the species, *E. longisiliquum*, is illegitimate (a later homonym, and the replaced synonym of *E. sikkimensis*). In FRPS, both *E. benthamii* and *E. longisiliquum* were recognized, even though they are indistinguishable morphologically. *Erysimum benthamii* is the earliest legitimate name for the species.


Herbs annual or biennial, (10–)30–90(–110) cm tall. Trichomes malpighiaceous and 3(or 4)-forked trichomes, glabrous inside; style stout, 1–2 mm, cylindric, sparsely pubescent; stigma entire or slightly 2-lobed. Mature seeds not seen. Fl. Jun–Jul, fr. Jul–Aug. Plains, gravelly gorges; 3400–4700 m. W Xizang [Pakistan].


波齿糖芥 bo chi tang jie

Erysimum cheiranthoides Linnaeus var. sinuatum Franchet; *E. sinuatum* (Franchet) Handel-Mazzetti; *E. yunnanense* Franchet.

Herbs annual, (9–)20–70(–100) cm tall. Trichomes primarily 3- or 4-fid, sometimes mixed with 5-fid ones, malpighiaceous trichomes primarily on stem and pedicels. Stems erect, often branched above, ribbed. Basal leaves rosulate, withered by fruiting. Lowermost and middle cauline leaves shortly petiolate or subsessile; leaf blade linear, lanceolate, or oblong, (1–)2–7(–8) cm × (1.5–)2.5–10(–15) mm, mostly with 3- or 4-fid trichomes, base cuneate, margin sinuate-dentate, dentate, or subentire, apex acute or obtuse; uppermost leaves sessile and often entire. Racemes corymbose, densely flowered, ebracteate, elongated considerably in fruit. Fruiting pedicels divaricate or ascending, 3–7(–9) mm, slender, much narrower than fruit. Sepals narrowly oblong, 2–3.5 × 0.4–0.7 mm, not saccate. Petals bright yellow, linear to linear-oblong, 3.5–5(–5.5) × 0.3–0.5(–0.7) mm, apex obtuse; claw undifferentiated from limb. Filaments yellow, 2–4 mm; anthers oblong, 0.4–0.7 mm. Ovules (20–)30–60(–70) per ovary. Fruit linear, terete or slightly 4-angled, (1–)2–3.5(–4) cm × 1–1.3 mm, somewhat torulose, suberect or divaricate-ascending, straight; valves with a distinct midvein, outside with 3–5-forked trichomes, inside densely pubescent; style slender, 0.5–1.5 mm, cylindric; stigma slightly 2-lobed. Seeds oblong, (0.6–)0.7–0.9(–1) × 0.4–0.5 mm. Fl. and fr. Mar–Jul.


小糖芥 xiao tang jie

Herbs annual, (2–)8–25(–40) cm tall. Trichomes malpighiaceous throughout. Stems erect, simple or branched above. Basal leaves not rosulate, soon withered; lowermost and middle cauline leaves with petioles 3–10(–15) mm, rarely subsessile; leaf blade oblanceolate, oblong, or oblongate-spatulate, (0.8–)1–4(–5) cm × (1–)2–5(–8) mm, base attenuate or cuneate, margin entire, apex obtuse. Upper cauline leaves sessile, usually smaller than basal. Racemes corymbose, densely flowered, ebracteate, elongated considerably in fruit. Fruiting pedicels erect, 0.5–1.5(–2) mm, stout, about as wide as fruit. Sepals linear-oblong, 2.2–3 × ca. 0.5 mm, not saccate. Petals yellow, linear, 3–4(–5) × 0.3–0.6 mm, apex obtuse; claw not differentiated from limb. Filaments yellow, 1.5–2.5(–3) mm; anthers oblong, ca. 0.5 mm. Ovules 16–40 per ovary. Fruit narrowly linear, terete, (1.3–)1.7–2.2(–2.5) cm × 0.7–0.9 mm, somewhat torulose, erect or ascending, straight; valves with obscure midvein, outside with malpighiaceous trichomes, inside glabrous; style stout, 0.5–1(–1.5) mm, cylindric, sparsely pubescent; stigma entire. Seeds oblong, 0.8–0.9 × 0.4–0.5 mm. Fl. May–Jun, fr. Jun–Jul. 2n = 18.

Grasslands; 700–4000 m. Xinjiang [Afghanistan, Kazakhstan, Kyrgyzstan, Mongolia, Pakistan, Russia, Tajikistan, Turkmenistan, Uzbekistan; SW Asia].


粗梗糖芥 cu geng tang jie

Erysimum rigidum de Candolle.

Herbs annual, (4–)15–45(–70) cm tall. Trichomes malpighiaceous, mixed with fewer 3-forked ones. Stems erect, simple or branched at base. Basal and lowermost cauline leaves subrosulate, often withered by fruiting; petiole (0.3–)0.5–2(–3) cm; leaf blade linear, narrowly oblanceolate, elliptic, or oblong, flat, (1–)2–8(–11) cm × (2–)5–10(–15) mm, base attenuate, margin subentire, coarsely dentate, denticulate, or repand, apex acute. Upper leaves sessile, usually smaller than basal, entire or denticulate. Racemes corymbose, densely flowered, ebracteate, elongated considerably in fruit. Fruiting pedicels divaricate, 2–4 mm, stout, about as wide as fruit. Sepals linear-oblong, 4–6 × 0.7–1 mm. Petals yellow, narrowly spatulate, 6–8 × 1.5–2 mm, apex rounded; claw subequaling sepals. Filaments yellow, 4–6 mm; anthers linear, 0.8–1.3 mm. Ovules (40–)50–80(–90) per ovary. Fruit narrowly linear, 4-angled, (2–)3–8(–10) cm × 1.5–2 mm, somewhat torulose, widely spreading or divaricate-ascending, straight or curved upward; valves with a distinct midvein, outside with malpighiaceous and fewer 3-forked trichomes on the outside, inside pubescent; style stout, 1–4 mm, cylindric or subclavate, sparsely pubescent; stigma slightly 2-lobed. Seeds oblong, 1.1–1.5 × 0.6–0.7 mm. Fl. Apr–Jul, fr. May–Sep. 2n = 14.

Disturbed sites, roadsides, fields, waste places, pastures; 200–1400 m. Liaoning, Xinjiang [Afghanistan, Kashmir, Kazakhstan, Kyrgyzstan, Pakistan, Russia, Tajikistan, Turkmenistan, Uzbekistan; N Africa, SW Asia, Europe].


棱果糖芥 leng guo tang jie

Cheiranthus siliculosus Marschall von Bieberstein, Fl. Taur.-Caucas. 2: 121. 1808; *Syrenia siliculosus* (Marschall von Bieberstein) Andrzejowski.

Herbs biennial or perennial, 30–90(–100) cm tall. Trichomes malpighiaceous throughout, mixed with 3-
forked ones on calyx. Stems erect, often branched at base and above. Basal leaves rosulate, often persisting, petiolate; leaf blade filiform to linear, rarely linear-oblancoideate, 1.5–8 cm × 1–2(–5) mm, longitudinally folded, base narrowly attenuate, margin entire, apex acute. Cauline leaves similar to basal. Racemes corymbose, densely flowered, ebracteate or rarely lowermost few flowers bracteate, elongated considerably in fruit. Fruiting pedicels ascending or divaricate-ascending, (2–)4–6 mm, stout, narrower than fruit. Sepals oblong-linear, (6–)7–9(–10) × 1–2 mm, united, persistent well after fruit maturity, strongly saccate. Petals bright yellow, obovate or broadly spatulate, (1.1–)1.4–1.8(–2) cm × 5–8 mm, apex rounded; claw distinct, subequaling sepal. Filaments yellow, 6–10 mm; anthers linear, 2–3 mm. Ovules 50–100 per ovary. Fruit oblong to oblong-linear, strongly 4-angled, slightly angustiseptate, (5–)7–10(–14) × 2–3 mm, smooth, erect and often appressed to rachis, straight; valves with a prominent midvein and slightly winged keel, outside with transversely oriented malpighiaceous trichomes, inside glabrous; style slender, (4–)5–10(–12) mm, cylindric; stigma strongly 2-lobed, with lobes often divergent. Seeds oblong, 1.1–1.4 × 0.7–0.9 mm. Fl. May–Jun, fr. Jun–Jul. 2n = 14.

Sandy areas, dunes; 400–1400 m. Xinjiang [Kazakhstan, Russia, Turkmenistan].

The record of *Erysimum vassilczenkovii* Polatschek in FRPS (as *Syrenia macrocarpa* Vassilcheko, not *E. macrocarpum* (Ruprecht) Stevens & Trautvetter (1883)) is very likely based on misidentified plants of *E. siliculosum*. The record of *E. sessiliflorum* R. Brown in Fl. Xinjiang. (2(2): 199. 1995, as *Syrenia sessiliflora* (R. Brown) Lederb.) is based on misidentified plants of *E. siliculosum* with slightly shorter fruiting pedicels.